

**REMARKS**

Claims 1-22 are currently pending in the application. Claims 1-22 stand rejected. Claim 1 has been amended.

In the Final Office Action dated November 16, 2004, the Examiner rejected claims 1, 9, 11, 12 and 20 under 35 U.S.C. 103(a) as being unpatentable over International Publication No. WO/99/28765 (Mueller) in view of U.S. Patent No. 5,221,843 (Alvarez) and the third edition of IEC 60406. The Examiner also rejected claim 10 as being unpatentable over Mueller, Alvarez, and IEC 60406, and further in view of U.S. Patents No. 6,239,516 (Floresta) and No. 5,912,944 (Budinski). The Examiner also rejected claims 13-15 as being unpatentable over Mueller, Alvarez, and IEC 60406, and further in view of U.S. Patent No. 5,757,021 (Dewaele). The Examiner also rejected claims 16-19 as being unpatentable over Mueller, Alvarez, and IEC 60406, and further in view of U.S. Patent No. 5,864,146 (Karellas). The Examiner also rejected claim 21 over Mueller, Alvarez, and IEC 60406, in view of Floresta, and claim 22 over Mueller, Alvarez, and IEC 60406, in view of Applicant's admitted prior art. The rejections are respectfully traversed.

Mueller describes an x-ray "cassette" which contains a phosphor carrier and a device for reading out information stored in the phosphor carrier. The device includes a radiation source for exciting the phosphor carrier, and a receiving means for receiving the resulting radiation. See Abstract. Referring to the description in U.S. Patent No. 6,373,074 (i.e., the U.S. patent claiming priority from Mueller), the receiving means is described as a CCD 12 in combination with a Selfoc lens assembly 14 which focuses the excitation radiation on the individual elements of the CCD. See column 5, lines 10-27. Notably, Mueller states that "[i]t is possible to limit the thickness of the x-ray cassette to about 45 mm."

As an initial matter, it is important to note that the term "cassette" as used by Mueller should not be equated with a "standard radiographic film cassette" as recited in the claims of the

present application. That is, as would be apparent to those of skill in the art, the “cassette” to which Mueller refers is more commonly referred to as a “bucky,” which is a term used in the industry for the cassette tray which also includes a reciprocating grid above it (invented by Bucky). Like radiographic film cassettes, buckys also have standard sizes (although not subject to an international standard) and the typical clearance for a cassette tray is 1.94” (about 49 mm). Background information relating to the nature of buckys has been provided herewith to illustrate this important distinction. This information includes illustrations created by the Applicant to facilitate the Examiner’s understanding of the difference between a “bucky” and a cassette as commonly understood in the art.

Despite the language in Mueller and Alvarez regarding compatibility with conventional equipment, neither of the references teaches a device which can conform to the form factor recited in claim 1 and referred to in the present specification. Rather, Mueller indicates that its lower limit on “cassette” (i.e., bucky) thickness is at least three times the upper limit of the preferred standard cassettes defined by IEC 60406. This is due to the fact that the receiving means in Mueller, i.e., the CCD and Selfoc lens system, cannot be compressed below the stated limit due in large part to optical considerations. This is to be contrasted with the present invention which offers a variety of embodiments which are not so constrained.

Therefore, because Mueller’s system cannot be enclosed in a cassette having a “form factor corresponding to a thickness of the cassette enclosure of about 0.6 inches” as recited in claim 1, the rejection of claim 1 over the combination of Mueller, Alvarez, and IEC 60406 is believed overcome. Indeed, the fact that the apparatus taught by Mueller cannot fit within the maximum thickness prescribed by IEC 60406 makes it clear that the combination of Mueller’s teachings with those of IEC 60406 is improper. The rejections of claims 2-22 are believed overcome for at least the reasons discussed.

The Examiner disagreed with the Applicant’s arguments in the previous response stating

that the 45 mm limit to which Mueller refers “is merely an example of the very small dimensions of the x-ray cassette and is not an express teaching of a lower limit of ~45 mm.” The Examiner went on to say that the “applicant’s argument that the cassette thickness cannot be manufactured with very small dimensions due to optical considerations such as the Selfoc lens is not persuasive since the Selfoc lens is optional.”

With regard to the first point, the Applicant respectfully disagrees. In describing a key advantage, Mueller states that his technique makes it possible “to limit the thickness of the x-ray cassette to about 45 mm.” It strains credibility to assert that this is “not an express teaching of a lower limit.” In addition to use of the term “limit” with reference to the phrase “about 45 mm,” the inventor is describing a key advantage of his invention. To assert that the inventor would not refer to the absolute minimum value he thought possible is simply not an accurate reading of the reference.

With regard to the second point, the Examiner mischaracterizes Mueller’s statement at column 5, lines 12-14. Mueller is not saying that some form of lens is not required, but that having an individual Selfoc lens “for each stimuable point of the line of the phosphor plate...is not required for the invention.” That is, the large array of Selfoc lenses contemplated by lines 12-13 of column 5 is not necessary. However, as would be understood by one of ordinary skill in the art, Mueller does not suggest that optical elements (e.g., a single Selfoc lens or the equivalent) between the plate and the photodetector are unnecessary. To the contrary, it would be apparent to one of ordinary skill in the art that Mueller’s system would not work without some form of relay optics to focus the radiation from the plate on the CCD.

That is, the manner in which Mueller’s technique reads out the information stored in a phosphor plate and the size of the CCD require some distance between the phosphor plate and the CCD assembly which, in turn, requires an optical system to transmit light from the plate to the CCD, i.e., to focus the light on the CCD. This can be understood with reference to Fig. 1 of

Mueller.

As shown in that figure, the size of CCD assembly 12 and the requirement that it be placed at an angle and off to the side of laser diodes 11 (so as to be able to receive the emitted radiation) requires a minimum physical spacing which, in turn, requires the use of an intervening optical relay. This, therefore, forces a minimum size on the assembly which Mueller himself states to be “about 45 mm.”

By contrast, the readout mechanism employed by the present invention allows the image capture devices (e.g., photodetector array 114 of Fig. 1) to be placed in extremely close proximity to the surface of phosphor plate 104. This allows for embodiments without bulky intervening optical elements which, in turn, enables a much thinner assembly geometry (i.e., about 0.6 inches) to be achieved.

Thus, because of the geometry imposed by Mueller’s readout technique, a device constructed in the manner described cannot even approach a “form factor corresponding to a thickness of the cassette enclosure of about 0.6 inches.”

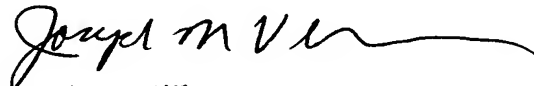
In view of the foregoing, the teaching of Mueller cannot be combined with IEC 60406 to obviate any of the claims of the present invention. The Applicant therefore respectfully requests that the rejection of claim 1 over Mueller, Alvarez, and IEC 60406 be withdrawn. In addition, dependent claims 2-22 are also believed to be allowable over the cited art for at least the reasons discussed.

In support of the foregoing arguments, a Declaration Under 37 C.F.R. 1.132 has been submitted herewith in which the inventor for the present application explains the technical bases for the proposition that the system described by Mueller cannot conform to the form factor recited in the present claims. More specifically, the inventor makes it clear why Mueller’s design is not capable of being confined within a cassette having the recited form factor. In addition, the inventor clarifies the difference between the term “cassette” as used by Mueller,

i.e., a "bucky," and the term cassette as it is used in the specification and claims of the present application. In view of this addition evidence, the Applicant believes all rejections overcome.

In view of the foregoing, Applicant believes all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (510) 663-1100.

Respectfully submitted,  
BEYER WEAVER & THOMAS, LLP

A handwritten signature in black ink, appearing to read "Joseph M. Villeneuve", with a long horizontal flourish extending to the right.

Joseph M. Villeneuve  
Reg. No. 37,460

P.O. Box 70250  
Oakland, CA 94612-0250  
(510) 663-1100